

## **ABSTRACT**

The present invention provides system and method of identifying a failure location in any datapath in a set of datapaths in a communication element, each datapath of the set of datapaths traversing from an ingress point through at least a first component to an egress point. In an embodiment, the method comprises: providing a diagnostic cell to adapted to be inserted at a starting point upstream of the first component in the any datapath; providing at least a first diagnostic cell counter module adapted to be associated with a first location in the first component, the first diagnostic cell counter module adapted to recognize when the diagnostic cell passes the first location and adapted to track passage of the diagnostic cell past the first location; inserting the diagnostic cell into the any datapath at the starting point; and analyzing the diagnostic cell counter module to identify the failure location in the any datapath.